Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Expanding Flexible Use in Mid-Band Spectrum	)	GN Docket No. 17-183
Between 3.7 and 24 GHz	)	

Comments of the Information Technology Industry Council

Introduction.

The Information Technology Industry Council (ITI) respectfully submits its comments in response to the Notice of Inquiry (NOI) in the above-captioned proceeding.[1] At the outset, ITI would like to commend the Federal Communications Commission ("FCC" or "Commission") for its action and leadership on a range of spectrum bands in recent years. As we have discussed in past filings and meetings with the Commission, it is imperative for innovation, investment, and economic growth that the U.S. continue to lead the world in making spectrum available for commercial licensed and unlicensed use, and we applaud the Commission for seeking more information on mid-band spectrum. The spectrum ranges identified in this proceeding will complement the spectrum being made available through the voluntary incentive auction process, and the Spectrum Frontiers proceeding. Each range – low, mid, and high band

[1] *Expanding Flexible Use in Mid-Band Spectrum Between 3.7 and 24 GHz*, Notice of Inquiry, GN Docket No. 17-183; August 3, 2017.

spectrum – will play a unique role in connectivity as an ever-increasing number of devices are wirelessly connected to the internet.

ITI's member companies span the technology sector and include hardware, software, internet, services, device, network equipment, and semiconductor companies; from the edge device that wirelessly connects to the network, through the equipment that routes and transmits wireless data, to the hardware and software that powers the core of the network. ITI's member companies reflect the breadth of stakeholders in the wireless ecosystem.[2] For these reasons, we have a unique interest in seeing the Commission build the record and move forward expeditiously on rules to make mid-band spectrum available for mobile commercial licensed and unlicensed use.

There is an Immediate Need for Mid-band Spectrum.

The range of devices being wirelessly connected to the internet today is rapidly changing the way in which wireless networks are designed, built and utilized. While mobile phones will be the most widely connected wireless device for the foreseeable future, wirelessly connected IoT devices are expected to reach 1.5 billion by 2022.[3] Mobile data and internet traffic in North America is expected to grow by compound annual grow rate of 34 percent between 2016 and 2021.[4] Advanced services to power IoT devices and applications such as

[2] For more information on ITI and ITI membership, please see: http://www.itic.org/about/member-companies.
[3] Ericsson Mobility Report, p 16, June 2017, https://www.ericsson.com/assets/local/mobility-report/documents/2017/ericsson-mobility-report-june-2017-north-america.pdf.
[4] Cisco Visual Networking Index, September 2017, https://www.cisco.com/c/en/us/solutions/collateral/service-provider/visual-networking-index-vni/complete-white-paper-c11-481360.html#_Toc484813995.

autonomous and connected vehicles, telehealth and smart city services, and many other applications will require access to low, mid and high band spectrum to meet the increasing variety of use cases. Each spectrum range will service a unique purpose, from transmitting limited amounts of data long distances via cell towers, to transmitting massive amounts of data instantaneously at extremely low latency but at much shorter distances via small cell technology. As mentioned above, Congress and the FCC have done a great job identifying and making low and high band spectrum available, via the voluntary incentive auction proceeding and the Spectrum Frontiers proceeding, respectively. More mid-band spectrum is necessary, however, to meet intermediate needs, including high speeds over moderate distances and the ability to penetrate obstructions the millimeter wave spectrum cannot.

Recognizing the urgent need for more mid-band spectrum, ITI was a founding member[5] of a broad coalition focused on making more mid-band spectrum available for mobile licensed and unlicensed use.[6] The coalition came together with the specific goal of advocating for making the 3700-4200 MHz available for flexible licensed use, and 6 GHz spectrum available for Part 15 unlicensed use. Support for this approach has been echoed outside the coalition as well. On June 21, 2017, U.S. Senate Commerce Committee Chairman John Thune (South Dakota) sent a letter to Chairman Pai, urging him to "explore possible new allocations in the mid-band frequencies, perhaps including the 3.7 GHz and 6 GHz bands…for both licensed and

[5] Founding members in the coalition include AT&T, Broadcom, Cisco, Comsearch, CTIA, Ericsson, Google Inc. and Alphabet Access, HPE, Intel Corporation, Information Technology Industry Council (ITI), Nokia, Samsung, T-Mobile, Verizon, and Wi-Fi Alliance.

[6] For information on the coalition please see: http://www.businesswire.com/news/home/20170803005751/en/Broad-Based-Coalition-Applauds-FCC-New-Mid-Band-Spectrum

unlicensed networks."[7] Shortly thereafter, Commissioner O'Rielly authored a blog explaining in further detail why this approach makes sense. In particular he noted, "when presented with a viable proposal that would free spectrum for licensed *and* unlicensed purposes while protecting or accommodating incumbent licensees, the Commission should grab it with both hands and rejoice. That exact scenario presents itself in the 3.7 to 4.2 GHz and 6 GHz bands."[8] He goes on to note "Under the coalition proposal, existing licensees would either be protected or otherwise accommodated. For example, the fixed service users in the 6 GHz band would be protected by unlicensed users and could expand their usage."[9]

The FCC Should Make Licensed and Unlicensed Mid-band Spectrum Available Expeditiously.

As mentioned above, ITI supports exclusive, flexible licensing from 3.7-4.2 GHz.[10] This band is ideal for 5G deployment as it is being identified for that use in other markets and is adjacent to the 3.5 GHz band, and is adjacent to the shared 3.5 GHz band, which mobile carriers are identifying as suitable to support extension of their services.

Furthermore, ITI supports full Part 15 unlicensed designation for the 5925-6425 band.[11] This band is being identified for unlicensed use in other markets as well and makes sense for unlicensed use in the U.S. market. Further, many of the incumbent licensees in this band are

[7] https://www.commerce.senate.gov/public/_cache/files/3cefb171-0d50-4c23-9f31-48942e874cc6/4CAB0C0B754962807BB0C203E951D581.thune-letter-on-mid-band-spectrum.pdf
[8] A Mid-Band Spectrum Win in the Making, blog by Commissioner Mike O'Rielly; July 10, 2017 https://www.fcc.gov/news-events/blog/2017/07/10/mid-band-spectrum-win-making
[9] https://www.fcc.gov/news-events/blog/2017/07/10/mid-band-spectrum-win-making
[10] NOI, ¶ 19.
[11] NOI, ¶ 29.

members of the mid-band spectrum coalition noted above, and believe unlicensed use, with appropriate protections for current licensees, is an acceptable use of 5925-6425.[12] In the 6425-7125 MHz band, all ITI member companies believe this spectrum can be used more efficiently and should be opened quickly and rules adopted to allow terrestrial broadband uses.[13]

Urgent Action is Needed to Provide U.S. Leadership.

Europe is attempting to take a leadership role as it has already allocated hundreds of megahertz of mid-band spectrum for licensed and unlicensed uses and are moving to make more available in anticipation of both rising demand for broadband that can be met with small cell deployments as well as new Internet of Things applications.[14] Similarly, China, Japan, and Korea are moving to make more mid-band spectrum available. For example, in early June the Chinese government progressed its plans to make an additional 500 MHz of mid-band spectrum available.[15] Without quick action on mid-band spectrum, the U.S. will cede leadership on this critical 5G spectrum.

[12] See again, coalition participants and support for unlicensed in 6 GHz here: http://www.businesswire.com/news/home/20170803005751/en/Broad-Based-Coalition-Applauds-FCC-New-Mid-Band-Spectrum.
[13] NOI, ¶ 36.
[14] See *5G for Europe: An Action Plan*, European Commission, September 2016, https://ec.europa.eu/transparency/regdoc/rep/1/2016/EN/1-2016-588-EN-F1-1.PDF
[15] See *China Issues Plan to Use 3300-3600 MHz, 4800-5000 MHz for 5G*; FierceWireless; June 7, 2017; http://www.fiercewireless.com/wireless/china-issues-plan-to-use-3300-3600-mhz-4800-5000-mhz-for-5g.

Conclusion.

ITI supports quick action to move to a rulemaking on 3.7-4.2 GHz and the 6 GHz band. In particular we support making the 3.7-4.2 GHz band available for mobile licensed use, and the 5925-6425 MHz band available for unlicensed use. Acting in a timely manner on this spectrum will ensure U.S. leadership in 5G across low-, mid-, and high-band spectrum.

Respectfully Submitted,

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